

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 July 2004 (15.07.2004)

PCT

(10) International Publication Number
WO 2004/059274 A3

(51) International Patent Classification⁷: G01M 3/24, 3/00

(21) International Application Number:
PCT/GB2003/005721

(22) International Filing Date:
24 December 2003 (24.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0230207.3 27 December 2002 (27.12.2002) GB

(71) Applicant (for all designated States except US): **MECON LIMITED** [GB/GB]; 5a Pound Hill, Cambridge CB3 0HE (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **THOMPSON, Martin** [GB/GB]; Mecon Limited, 5a pound Hill, Cambridge CB3 0HE (GB); **HARPER, Martin, Francis, Lucien** [GB/GB]; Mecon Limited, 5a Pound Hill, Cambridge CB3 0HE (GB).

(74) Agent: **BARKER BRETTELL**; St. John's Innovation Centre, Cowley Road, Cambridge CB4 0WS (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

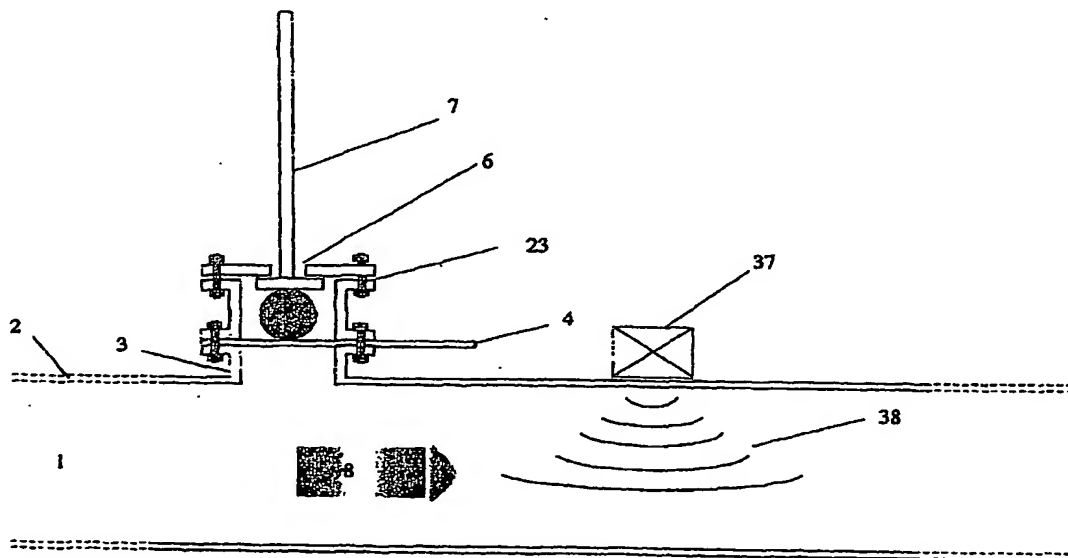
Published:

— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
16 June 2005

[Continued on next page]

(54) Title: LEAK LOCATOR



(57) Abstract: A method of determining the presence and location of leaks in a pipeline (2) comprising inserting a leak location device capable of detecting and recording the occurrence of noise into the flow of fluid (1) within the pipeline (2); allowing the leak location device to travel through the pipeline (2) with the fluid flow; causing the leak location device to detect and record noise in the fluid; and causing the leak location device to record the time at which noise is detected. Generally the leak location device is retrieved from the pipeline (2) downstream to its insertion point.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

Int. Application No

PCT/GB 03/05721

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 G01M3/24 G01M3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2 884 624 A (DEAN HOWARD J. EN ET AL) 28 April 1959 (1959-04-28) non-unity document column 1 - column 3; figures 1,2	1, 17, 28
X	US 3 691 819 A (ROBERT J. GUEST) 19 September 1972 (1972-09-19)	28-30, 32, 33
Y	column 2, line 34 - column 4, line 55; figures 1,2	12-16, 22, 31
X	US 3 754 275 A (CARTER N, US ET AL) 21 August 1973 (1973-08-21) column 2, line 29 - column 4, line 63; figure 1	1-4, 9, 11, 17-21, 23-26
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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A document defining the general state of the art which is not considered to be of particular relevance

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X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Z document member of the same patent family

Date of the actual completion of the international search

19 April 2005

Date of mailing of the international search report

26/04/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax (+31-70) 340-3016

Authorized officer

Andreassen, J

INTERNATIONAL SEARCH REPORT

Int. Application No.

PCT/GB 03/05721

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 508 433 A (WILLIAM M. BUSTIN) 28 April 1970 (1970-04-28) column 3, line 54 - column 6, line 2; figures 1,3,8 column 7, line 23 - line 38 -----	1-3, 9, 11, 17-20, 23, 27
X	US 3 409 897 A (BOSSELAAR HENDRIK ET AL) 5 November 1968 (1968-11-05)	1-6, 9-11, 17-20, 23, 27
Y	column 2, line 13 - line 16; figures 1,3,4 column 3, line 5 - column 5, line 10 -----	12-16, 22, 31

INTERNATIONAL SEARCH REPORT

national application No.
PCT/GB 03/05721

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/ GB 03 /05721

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 28-33

A leak location system comprising a leak detection device arranged to collect acoustical data and at least one monitoring means capable of transmitting signals and the leak detection device is capable of receiving the transmitted signals (claim 28).

2. claims: 1-27

A self contained leak location device having an oval shape suitable for travelling in a pipeline, wherein the center of buoyancy and the center of gravity are separated from one another along the long axis (claim 8).

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int. Patent Application No

PCT/GB 03/05721

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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